Pre-service teachers making sense of ICT integration

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Discourses on the technological impact in modern societies have merged with pedagogic discourses in mathematics education. In this short communication, I share ongoing research on identifying possible discourses that influence pre-service teachers (PTs) in integrating ICT in mathematics education. Discourses are understood as social systems of meaning-making in which a value is made by interpreting sources of information (Fairclough, 2012). They are worthy of study because they provide information to teacher education about how PTs make sense of ICT integration in mathematics classrooms. The theory of the pedagogic device (Bernstein, 2003) was used to study the selection and appropriation of knowledge about mathematics education and ICT that is translated to practical choices of ICT integration (recontextualization).

The data came from three groups of pre-service teachers' written assignments, which reported their practicum experiences in grades 1-7 about the use of digital technology in mathematics lessons. Similarities among all three texts highlighted a social dimension in which collaboration and mathematical conversations are considered fundamental for mathematical learning (discourses on mathematics education). PTs' texts articulate that ICT can be used to defeat traditional practices in mathematics classrooms, in which constantly working with textbooks is demotivating and monotonous. ICT is portrayed as promising to make a difference (discourses on ICT). In this scenario, working with games and websites that adapt to different levels are seen as new and motivating ways of learning mathematics with ICT (recontextualization).

The analysis indicates that PTs' make sense of ICT integration in mathematics classrooms while trying to appropriate discourses of mathematical learning. The social dimension is highlighted as an essential element of mathematical learning, but its connection to the use of websites for personalized learning was not clear. PTs making meaning about ICT integration in mathematics classrooms is giving value to motivational promises of ICT discourses. PTs' seem to highlight technology as a new and more motivating way. Still, the data suggests they reinforced traditional practices. ICT is often used to practice mathematics, not in textbooks, but through websites and games. These results indicate that teacher education should pay closer attention to how PTs make sense of the integration. Particularly when discourses point out that ICT has the potential to challenge traditional practices. Teacher education could open spaces for PTs to question traditions of mathematics education and available ICT resources.

References

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